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## NOTICE OF ALLOWANCE AND FEE(S) DUE

27045 7590  
ERICSSON INC.  
6300 LEGACY DRIVE  
M/S EVR 1-C-11  
PLANO, TX 75024

03/04/2011

EXAMINER

MANOHARAN, MUTHUSWAMY GANAPATHY

ART UNIT

PAPER NUMBER

2617

DATE MAILED: 03/04/2011

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,246	03/29/2006	Szabolcs Malomoksy	PIR622-US1	5528

TITLE OF INVENTION: PERFORMANCE MANAGEMENT OF CELLULAR MOBILE PACKET DATA NETWORKS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	06/06/2011

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE** OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

## HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE  
Commissioner for Patents  
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**or Fax (571)-273-2885**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

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## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/595,246	03/29/2006	Szabolcs Malomsoky	P18622-US1	5528
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TITLE OF INVENTION: PERFORMANCE MANAGEMENT OF CELLULAR MOBILE PACKET DATA NETWORKS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	06/06/2011

EXAMINER	ART UNIT	CLASS-SUBCLASS
MANOHARAN, MUTHUSWAMY GANAPATHY	2617	370-345000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB112) attached;
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB117, Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, \_\_\_\_\_ 1
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. \_\_\_\_\_ 2
- \_\_\_\_\_ 3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.111. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s): (Please first reuply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_ Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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03/04/2011

EXAMINER

MANOHARAN, MUTHUSWAMY GANAPATHY

ART UNIT PAPER NUMBER

2617

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## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 714 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 714 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

## Privacy Act Statement

**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

**Notice of Allowability****Application No.**

10/595,246

**Examiner**MUTHUSWAMY G.  
MANOHARAN**Applicant(s)**

MALOMSOKY ET AL.

**Art Unit**

2617

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/7/2010.
2. ☒ The allowed claim(s) is/are 2-8,10-20,22-27,29 and 31-33.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of the:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).  
\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  
1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.  
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

/Muthuswamy G Manoharan/  
Examiner, Art Unit 2617/George Eng/  
Supervisory Patent Examiner, Art Unit 2617

### DETAILED ACTION

Applicant has amended the claim 33 to overcome the 101 rejection.

#### ***Allowable Subject Matter***

Claims 2-8, 10-20, 22-27, 29, and 31-33 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding **claim 31**, the prior art fails to disclose singly or in combination or render obvious a method for performance management in a cellular mobile packet data network having a plurality of mobile stations linked to a plurality of base stations through a plurality of radio channels, the base stations being linked to a radio access network, and the radio access network being linked to a support node in a packet core network comprising the steps of:

capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network;

building a traffic and session database by parsing through the traces in order to extract and correlate information about a plurality of user transactions which happened during a measurement period, wherein each user transaction is associated with a specific subscriber using captured session management signaling, and each user transaction is associated with a cell location using captured mobility management signaling, said building the traffic and session database comprises the steps of:

parsing through the raw traffic traces for internet protocol (IP) packets;  
processing the IP packets one by one to group together the IP packets  
belonging to a same user transaction of a same user;

storing condensed application transactions information associated with the  
IP packet groups;

associating subscribers with the stored condensed application transactions  
information by:

parsing through signaling message used to initiate subscriber data  
sessions where the subscribers identify themselves by using unique identifiers and the  
cellular mobile data network answers with IP addresses which the mobile stations use  
for the user transactions;

associating the user transactions with cell level locations by:

monitoring mobility management signaling when the mobile stations  
change cells to obtain identifiers of the subscribers and the cell level  
locations;

storing the identifiers of the subscribers together with the cell level  
locations and timestamps when the subscribers visited the cells;  
extending the stored condensed application transactions  
information to include the cell level locations of the user transactions and  
indicators of cell changes during a course of the user transactions; and

storing summary data about the users transactions belonging to same user sessions together with a list of cells visited during the user sessions and the timestamps when the subscribers visited the cells;

defining a set of key performance indicators; and calculating the set of key performance indicators using a subset of the information in the traffic and session database to monitor user perceived end-to-end performance on a cell level.

Regarding **claim 32**, the prior art fails to disclose singly or in combination or render obvious a system for performance management in a cellular mobile packet data network having a plurality of mobile stations linked to a plurality of base stations through a plurality of radio channels, the base stations being linked to a radio access network, and the radio access network being linked to a support node in a packet core network, the system including a monitor node residing on a computer coupled to the cellular mobile packet data network comprising:

means for capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network;

means for building a traffic and session database by parsing through the traces in order to extract and correlate information about a plurality of user transactions which happened during a measurement period, wherein each user transaction is associated with a specific subscriber using captured session management signaling, and each user transaction is associated with a cell location using captured mobility management signaling, said means for building the traffic and session database comprises:

means for parsing through the raw traffic traces for internet protocol (IP) packets;



means for processing the IP packets one by one to group together the IP packets belonging to a same user transaction of a same user;

means for storing condensed application transactions information associated with the IP packet groups;

means for associating subscribers with the stored condensed application transactions information, said means for associating subscribers comprises: means for parsing through signaling message used to initiate subscriber data sessions where the subscribers identify themselves by using unique identifiers and the cellular mobile data network answers with IP addresses which the mobile stations use for the user transactions;

means for associating the user transactions with cell level locations, said means for associating the user transactions comprises: means for monitoring mobility management signaling when the mobile stations change cells to obtain identifiers of the subscribers and the cell level locations;

means for storing the identifiers of the subscribers together with the cell level locations and timestamps when the subscribers visited the cells;  
means for extending the stored condensed application transactions information to include the cell level locations of the user transactions and indicators of cell changes during a course of the user transactions; and

means for storing summary data about the users transactions belonging to same user sessions together with a list of cells visited during the user sessions and the

timestamps when the subscribers visited the cells;

means for defining a set of key performance indicators; and

means for calculating the set of key performance indicators using a subset of the information in the traffic and session database to monitor user perceived end-to-end performance on a cell level.

Regarding **claim 33**, the prior art fails to disclose singly or in combination or render obvious a computer program product embodied in a non-transitory computer readable storage medium, for performance management in a cellular mobile packet data network including a monitor node, said computer program product comprising:

computer-readable program code for capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network;

computer-readable program code for building a traffic and session database by parsing through the traces in order to extract and correlate information about a plurality of user transactions which happened during a measurement period, wherein each user transaction is associated with a specific subscriber using captured session management signaling, and each user transaction is associated with a cell location using captured mobility management signaling, said computer-readable program code for building the traffic and session database comprises:

computer-readable program code for parsing through the raw traffic traces for internet protocol (IP) packets;

computer-readable program code for processing the IP packets one by one to group together the IP packets belonging to a same user transaction of a same user;

computer-readable program code for storing condensed application transactions information associated with the IP packet groups;

computer-readable program code for associating subscribers with the stored condensed application transactions information, said computer-readable program code for associating subscribers comprises:

computer-readable program code for parsing through signaling message used to initiate subscriber data sessions where the subscribers identify themselves by using unique identifiers and the cellular mobile data network answers with IP addresses which the mobile stations use for the user transactions;

computer-readable program code for associating the user transactions with cell level locations, said computer-readable program code for associating the user transactions comprises:

computer-readable program code for monitoring mobility management signaling when the mobile stations change cells to obtain identifiers of the Subscribers and the cell level locations;

computer-readable program code for storing the identifiers of the subscribers together with the cell level locations and timestamps when the subscribers visited the cells;

computer-readable program code for extending the stored condensed application transactions information to include the cell level locations of the user transactions and indicators of cell changes during a course of the user transactions; and

computer-readable program code for storing summary data about the users transactions belonging to same user sessions together with a list of cells visited during the user sessions and the timestamps when the subscribers visited the cells;

computer-readable program code for defining a set of key performance indicators; and

computer-readable program code for calculating the set of key performance indicators using a subset of the information in the traffic and session database to monitor user perceived end-to-end performance on a cell level.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MUTHUSWAMY G. MANOHARAN whose telephone number is (571)272-5515. The examiner can normally be reached on 7:00AM-2:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eng George can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George Eng/  
Supervisory Patent Examiner, Art Unit 2617

/Muthuswamy G Manoharan/  
Examiner, Art Unit 2617